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No. 19, Original

In the Supreme Court of the United States

OCTOBER TERM, 1930

STATE OF ARIZONA, COMPLAINANT

v.

STATE OF CALIFORNIA, STATE OF NEVADA, STATE OF UTAH, STATE OF NEW MEXICO, STATE OF COLORADO, STATE OF WYOMING, AND RAY LYMAN WILBUR, SECRETARY OF THE INTERIOR, DEFENDANTS

MOTION BY RAY LYMAN WILBUR, SECRETARY OF THE INTERIOR, TO DISMISS THE BILL OF COMPLAINT, AND BRIEF IN SUPPORT THEREOF

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MOTION BY THE DEFENDANT RAY LYMAN WILBUR, SECRETARY OF THE INTERIOR, TO DISMISS THE BILL OF COMPLAINT

Now comes the defendant Ray Lyman Wilbur, Secretary of the Interior, by the Solicitor General of the United States, and moves that the bill of complaint be dismissed for the reasons that:

1. The bill of complaint does not join the United States, which is an indispensable party to this suit.

2. The proposed acts of the defendants will not invade any vested rights of the complainant or of any of its citizens. Consequently the bill of complaint fails to state a case for equitable relief.

3. In failing to allege any actual or threatened interference with any existing right of the complainant, the bill of complaint presents only abstract questions which may never arise in any justiciable case or controversy.

4. Upon the allegations of the bill of complaint and in view of facts of which the Court will take judicial notice, the Boulder Canyon Project Act is clearly constitutional, and acts of the Secretary pursuant to its terms can not give rise to any cause of action.

Wherefore, this defendant prays that the bill of complaint be dismissed and that he be not required to plead further.

THOMAS D. THACHER,
Solicitor General.

JANUARY 12, 1931.

BRIEF FOR THE SECRETARY OF THE INTERIOR, IN SUPPORT OF MOTION TO DISMISS THE COMPLAINT

STATE OF THE PLEADINGS

Upon leave granted, the State of Arizona filed in this Court an original bill of complaint against the six other States of the Colorado River Basin and the Secretary of the Interior of the United States. On November 24, 1930, process was made returnable on January 12, 1931. All of the defendants have moved to dismiss the complaint.

THE QUESTIONS PRESENTED

1. Is the United States an indispensable party defendant to the cause of action attempted to be alleged in the complaint?

2. Is any cause of action within the jurisdiction of this Court alleged against the Secretary of the Interior?

STATEMENT

The bill asks this Court to decree that each and every provision of the Colorado River Compact and of the Boulder Canyon Project Act (45 Stat. 1057) is unconstitutional and void and to enjoin each of the defendants from carrying out any provision of the Compact or Act or any contract based upon such Compact or Act. (Bill, 39.)

The Compact and the Act are set forth as appendices to the bill of complaint. (Pp. 50, 58.) As said in the proclamation of the President on June 25, 1929 (see Bill, 22), the Compact has been approved by the States of California, Colorado, Nevada, New Mexico, Utah, and Wyoming, and by the Act it was approved by Congress. (Sec. 13 (a), Bill, 74.)

The Compact undertakes to apportion the water of the Colorado River and its tributaries. The Colorado River territory is divided into an Upper Basin and a Lower Basin at Lee Ferry, a point in the Colorado River in the northeastern corner of the State of Arizona. Article II of the Compact provides (Bill, 52):

> (f) The term "Upper Basin" means those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system above Lee Ferry.
>
> (g) The term "Lower Basin" means those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the

Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the system below Lee Ferry.

Article III of the Compact provides (Bill, 52, 53):

> (a) There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.
>
> (b) In addition to the apportionment in paragraph (a), the Lower Basin is hereby given the right to increase its beneficial consumptive use of such waters by one million acre-feet per annum.
>
> * * * * *
>
> (d) The States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years, reckoned in continuing progressive series, beginning with the first day of October next succeeding the ratification of this Compact.

Section 4 (a) of the Boulder Canyon Project Act provides (Bill, 62) that the Act shall not become effective

> until the State of California, by act of its legislature, shall agree irrevocably and un-

> conditionally with the United States and for the benefit of the States of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, as an express covenant and in consideration of the passage of this Act, that the aggregate annual consumptive use (diversions less returns to the river) of water of and from the Colorado River for use in the State of California, including all uses under contracts made under the provisions of this Act and all water necessary for the supply of any rights which may now exist, shall not exceed four million four hundred thousand acre-feet of the waters apportioned to the Lower Basin States by paragraph (a) of Article III of the Colorado River Compact, plus not more than one-half of any excess or surplus waters unapportioned by said Compact, such uses always to be subject to the terms of said Compact.

The same section of the Act also authorized an interstate agreement which has not been made; but the terms there set forth show how Congress has either interpreted the terms of the Compact or consented to its modification by the States of the Lower Basin. The section provides:

> The States of Arizona, California, and Nevada are authorized to enter into an agreement which shall provide (1) that of the 7,500,000 acre-feet annually apportioned to the Lower Basin by paragraph (a) of Article III of the Colorado River Compact, there shall be apportioned to the State of

Nevada 300,000 acre-feet and to the State of Arizona 2,800,000 acre-feet for exclusive beneficial consumptive use in perpetuity, and (2) that the State of Arizona may annually use one-half of the excess or surplus waters unapportioned by the Colorado River Compact, and (3) that the State of Arizona shall have the exclusive beneficial consumptive use of the Gila River and its tributaries within the boundaries of said State * * *.

By the Act the Secretary of the Interior is authorized to construct a dam and incidental works in the main stream of the Colorado River at Black Canyon or Boulder Canyon to create a storage reservoir and also to construct a main canal and appurtenant structures entirely within the United States connecting the Laguna Dam (or other suitable diversion dam which the Secretary of the Interior is authorized to construct if deemed necessary or advisable by him) with the Imperial and Conchella Valleys in California. (Sec. 1, Bill, 58, 59.) Other clauses relate to the meeting of international obligations by supplying water to Mexico.

The Act also provides that expenditures in connection with the dam at Black Canyon are to be recouped within fifty years and that expenditures in connection with the canal are to be recouped as provided in the reclamation law. (Sec. 4, Bill 64.)

The complainant (Bill, 7, 8) alleges that 6,500,000 acre-feet of water are diverted annually from

the Colorado River and its tributaries below Lee Ferry and are used and consumed in Arizona, California, Nevada, and New Mexico, and that of this amount 3,500,000 are used and consumed in Arizona, 2,900,000 acre-feet being diverted from the Gila River and its tributaries. Thus only 600,000 acre-feet are diverted in Arizona from the main stream. The complainant (Bill, 22) claims that the proposed compact between Arizona, California, and Nevada, which is authorized by Section 4 (a) of the Act, would not apportion to Arizona as much water as the State is using at the present time. Said proposed apportionment of 2,800,000 acre-feet of water is less than the quantity of water already appropriated in Arizona and would provide no water for future appropriation in said State.

The terms of the proposed tri-state compact have been already quoted. (P. 6, *supra.*) While that compact is not in issue in this case, a reading of its provisions will show that the complainant's contention is unsound and that the inference suggested by that contention, that Congress is there proposing an unfair apportionment of the water, is unwarranted. The complainant claims that it is now using 2,900,000 acre-feet from the Gila River and its tributaries. The proposed tri-state compact expressly assures to Arizona the exclusive beneficial use of all of that water. The Act assures to the Lower Basin a minimum average flow of

7,500,000 acre-feet in the main stream of the Colorado River at Lee Ferry. According to the bill (p. 8) 1,000,000 acre-feet enter the river between Lee Ferry and Laguna Dam, and this does not include water from the Gila River, which enters the Colorado River ten miles below Laguna Dam. (Bill, 7.) Of this minimum total of 8,500,000 acre-feet, the proposed tri-state compact would assign 300,000 acre-feet to the State of Nevada; California has agreed to accept a maximum of 4,400,000 acre-feet plus not more than one-half of any excess of surplus water unapportioned by said compact; and Arizona, which is now using 600,000 acre-feet from the main stream, is not restricted to that amount of water.

The complainant also cites a contract of the Secretary of the Interior with the Metropolitan Water District of Southern California for the delivery to that district of 1,050,000 acre-feet of stored water annually and says (Bill, 35) that—

> Said 1,050,000 acre-feet of water, together with the 6,500,000 acre-feet of water heretofore appropriated and now being used in said Lower Basin, will exceed the full amount of 7,500,000 acre-feet of water which said [Colorado River] compact attempts to apportion to said Lower Basin. The delivery of said 1,050,000 acre-feet of water to said District, as in said pretended contract provided, would exhaust said apportionment, and, by the terms of said Compact and of

said Boulder Canyon Project Act, no water would then be available for or subject to appropriation in said Lower Basin, although there would still remain in said Colorado River System 7,950,000 acre-feet of unappropriated water per year.

As already pointed out, the complainant is not stating correctly the amount of water which may be appropriated. It is not forbidden to make additional appropriations of water at the present time.

The complainant alleges that there are numerous sites which are suitable for the construction, maintenance, and operation of dams and reservoirs the development of which would long since have commenced but for the passage of the Boulder Canyon Project Act (Bill, 12); but the only site which it names is at Black Canyon, on the boundary line between Arizona and Nevada (Bill, 10); and the State does not show that it would be possible for anyone other than the United States to secure title to the land which would be used in the construction of a dam and reservoir at that site, nor that it would be possible for any permittee of the State of Arizona to construct a dam at that point, or at any other point on the river where it constitutes a boundary between two States, without the consent of a State which is a party to the Colorado River Compact, and which presumably would not grant such consent except in furtherance of the purposes of the Compact.

The first section of the Act (Bill, 58) declares that the law is enacted

> for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking. * * *

Section 6 (Bill, 68) provides:

> That the dam and reservoir provided for by section 1 hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River Compact; and third, for power. * * *

Section 9 (Bill, 71) ordains:

> That all lands of the United States found by the Secretary of the Interior to be practicable of irrigation and reclamation by the irrigation works authorized herein shall be withdrawn from public entry.

The section then provides for the disposition of such lands in accordance with the provisions of the reclamation law.

The State contends that the Colorado River is not navigable below Black Canyon (Bill, 7, 31) and that a dam at that point, regulating the flow of water, would not be in aid of navigation.

The State also contends that over the waters of this boundary stream, even where it has political jurisdiction only to the middle of the stream (Constitution of Arizona, Article I), it can maintain against other States and against the United States the same control which it might maintain against its own citizens.

Arizona not having joined with the other States in the Compact seeks to enjoin the Secretary from carrying out the terms of the Act, including the construction of the dam and reservoir. If in the administration of the stored water the Secretary shall invade any rights of the State or its inhabitants to take water from the stream which has already been appropriated to beneficial uses or shall prevent the appropriation of unappropriated water to new uses, or if any such invasion of rights should be immediately threatened by the Secretary, perhaps Arizona would be entitled to equitable relief, but there are no allegations in the bill of complaint upon which the prayer for relief enjoining all action pursuant to the Act can be predicated.

SUMMARY OF ARGUMENT

This suit is brought in order to challenge the constitutionality of an Act of Congress. It involves the sovereign and property rights of the United

States. Therefore the United States is an essential party to the cause and the suit can not proceed in its absence.

The complainant does not control all of the water which flows through the State or along its borders. So far as the State or any of it inhabitants has perfected rights to water, such rights will not be interfered with by the execution of the Boulder Canyon Project Act and are legally secured by the provisions of that Act.

As to the making of additional appropriations of water by the State or its permittees, the complainant has not stated a case sufficiently concrete to constitute a justiciable controversy.

The Court is asked to take judicial notice of facts which show that the Colorado River below Black Canyon has been a navigable stream on which interstate commerce has been conducted and that the proposed developments will make the stream more navigable.

The United States owns large tracts of irrigable public lands and of irrigable lands of Indian reservations. As against Arizona it has the right to take water from the river for the benefit of those lands. It also has the right to deliver to the State of California as much water as that State might appropriate for itself. Congress has constitutional power to make appropriations for the public welfare. Under this power it has additional and very urgent reasons for undertaking control of the

waters of the Colorado River, holding in check behind the dam the huge floods which menace large tracts of land in the lower reaches of the Colorado basin. By storing water and releasing it gradually the Federal Government will not only improve navigation and render life and property safer in California and in Arizona, but will secure a revenue which will make this great undertaking self-supporting. The Boulder Canyon Project Act is consistent with the letter and the spirit of the Constitution.

ARGUMENT

I

THE UNITED STATES IS AN INDISPENSABLE PARTY TO THIS CAUSE. SUIT MAY NOT BE MAINTAINED WITHOUT MAKING IT A DEFENDANT; AND IT MAY NOT BE MADE A DEFENDANT WITHOUT ITS CONSENT.

This suit involves the right of the United States to impound water of the Colorado River for the purpose of improving navigation and in order to use a portion of that water for the reclamation of public lands. The United States is a necessary party to any final determination of its right to control the use of a stream, and especially so where it is claiming the right, as landowner, to appropriate that water to the use of itself and its grantees. *Morrison v. Work*, 266 U. S. 481, 485. An action to restrain the Secretary of the Interior from constructing the works authorized by Congress upon the ground that the State may forbid the United

States to impound water of a stream on the boundary of that State is in substance an action against the United States and one which may not be maintained without the consent of Congress.

In *Kansas* v. *Colorado*, 185 U. S. 125, where the complainant charged that the defendant had constructed reservoirs and was preparing to construct additional reservoirs to impound water which had been accustomed to flow into the complainant State, this Court said (p. 142):

> The action complained of is state action and not the action of state officers in abuse or excess of their powers.

In *Minnesota* v. *Hitchcock*, 185 U. S. 373, where the State sought to restrain the Secretary of the Interior from selling certain lands, the Court pointed out that, although the United States was not named as defendant, it must be considered a party to the controversy (p. 387):

> The legal title to these lands is in the United States. The officers named as defendants have no interest in the lands or the proceeds thereof. The United States is proposing to sell them. This suit seeks to restrain the United States from such sale, to divest the Government of its title and vest it in the State. The United States is, therefore, the real party affected by the judgment and against which in fact it will operate, and the officers have no pecuniary interest in the matter. If whether a suit is one

against a State is to be determined, not by the fact of the party named as defendant on the record, but by the result of the judgment or decree which may be entered, the same rule must apply to the United States. The question whether the United States is a party to a controversy is not determined by the merely nominal party on the record but by the question of the effect of the judgment or decree which can be entered.

The Court exercised jurisdiction and decided the case upon the merits simply because Congress had consented to the maintenance of the suit. (Pp. 387, 388.)

In *Oregon* v. *Hitchcock*, 202 U. S. 60, 68, 69; *Louisiana* v. *Garfield*, 211 U. S. 70, 78; *Louisiana* v. *McAdoo*, 234 U. S. 627; *New Mexico* v. *Lane*, 243 U. S. 52, where the States had brought actions against officers of the United States, the Court held that the rights of the United States would be affected if the contentions of the States were sustained and that for that reason the actions could not be sustained without the consent of Congress. See also *Goldberg* v. *Daniels*, 231 U. S. 218, 221, 222; *International Postal Supply Co.* v. *Bruce*, 194 U. S. 601. The United States may not be sued even by a State without its consent. "Public policy forbids that conclusion." *Kansas* v. *United States*, 204 U. S. 331, 342.

The cases are not confined to those which hold that where the United States is in possession of property a suit affecting its title may not be

brought. *Wells* v. *Roper*, 246 U. S. 335; *Louisiana* v. *McAdoo*, 234 U. S. 627, were cases in which the plaintiffs sought to interfere with the performance of official duties by officers of the United States, and the Court held that those suits which did not affect the title of the United States to property, were nevertheless in substance suits against the Federal Government.

So also in *North Dakota* v. *Chicago & Northwestern Ry. Co.*, 257 U. S. 485, where the State sought by an original bill to prevent certain railway companies from applying an order of the Interstate Commerce Commission until this Court could review the decree upon which that order was made, the Court decided that it would be inequitable to enter a decree except in such form as to bind the Interstate Commerce Commission and the United States, and as the United States had not consented to suit in this Court upon an original bill in such a case, the bill must be dismissed. To the same effect are *Texas* v. *Interstate Commerce Commission*, 258 U. S. 158, 164; *Lambert Run Coal Co.* v. *Baltimore & Ohio R. R. Co.*, 258 U. S. 377, 382.

Here the United States, by an Act of Congress, is claiming that as the owner of land whose title is not contested, it has the right to appropriate water from an interstate stream, and the State is contending that its sovereignty extends over that water in derogation of any rights of the United States. The United States, by Act of Congress, is claiming

the right to impound water in order to improve navigation, and the State is denying that the impounding of the water and the regulating of its flow are within the power of the United States. These and other issues involving the authority of the United States the State is seeking to have determined in the present case, although the United States is not a party thereto.

The allegations of the complaint do not support any assertion of tortious interference by the Secretary with any right upon which a cause of action against him as an individual can be predicated. In effect the complainant is seeking a declaratory judgment that an Act of Congress is unconstitutional.

II

NO VESTED RIGHTS OF THE COMPLAINANT OR OF ANY OF ITS CITIZENS WILL BE INVADED BY THE EXECUTION OF THE ACT

There are no allegations in the complaint that any existing or vested right has been invaded or is presently threatened.

By their own terms both the Act and the Compact are subordinated to all such rights (Colorado River Compact, Art. 8, Bill, p. 56; Boulder Canyon Project Act, Secs. 6 and 18, Bill, pp. 68 and 77); nor is there any interference, actual or threatened, with the right of Arizona, or her inhabitants, to make appropriation from the unappropriated waters of the Colorado River.

On the contrary, the allegations, when read in connection with the Act and the Compact upon which they are predicated, disclose that California has agreed to limit the total appropriations from the flow of 7,500,000 acre-feet of water at Lee Ferry and the additional flow of 1,000,000 acre-feet which enters the river between Lee Ferry and Laguna Dam within her jurisdiction to 4,900,000 acre-feet, leaving 3,600,000 to satisfy present diversions from the main stream in Arizona not exceeding 600,000 acre-feet. The balance of 3,000,000 acre-feet in the main stream thus will remain to satisfy present and future uses in Nevada and future appropriations in Arizona. If Arizona's contentions are correct, the entire unappropriated flow of the stream is now and will continue until appropriation by others to be subject to appropriation by her citizens without regard to the terms of the Compact to which she is not a party. Until the dam has been built and the right of the State of Arizona or her citizens to make appropriations adequate to her existing needs has been invaded, or is presently threatened, there can be no basis for relief.

We are not unmindful of the allegations contained in paragraph XXX of the complaint, reading as follows:

> Pursuant to and under color of said act, said defendant has seized and taken possession of all that part of the Colorado River

which flows in Arizona and on the boundary thereof, and all of the water flowing in said river, including the 8,000,000 acre-feet of unappropriated water now flowing therein, and all of the dam sites and reservoir sites mentioned in paragraph X hereof, and now has said river, said water and said sites in his possession; has excluded and is now excluding the State of Arizona, its citizens, inhabitants and property owners from said river, said water and said sites, and from all access thereto; has prevented and is now preventing said State, its citizens, inhabitants and property owners from appropriating any of said 8,000,000 acre-feet of unappropriated water, all of which is now subject to appropriation in Arizona; has thereby prevented and is now preventing the irrigation of the land in the irrigation projects mentioned in paragraph XI hereof; and, unless enjoined therefrom, will continue so to do.

To support such vague assertions we submit there should be some statement of the rights which the Secretary is thus alleged to be invading. The only dam site mentioned in paragraph X is the site at Black Canyon, where a dam is to be constructed by the Secretary of the Interior under authority of Section 1 of the Boulder Canyon Act. Paragraph X refers to other dam sites on the Colorado River without mentioning the locality of any of them. Paragraph XI refers to irrigation projects without mentioning their locality, and alleges that

in order to develop these projects it will be necessary to construct dams and reservoirs and for this purpose to use the dam sites and reservoir sites mentioned in paragraph X. But the bill of complaint fails to allege that the title to any of the sites is not in the United States or that the State or any of its inhabitants has any title thereto. Thus the possession of these sites by the Secretary, and the exclusion of others therefrom, is not shown to be wrongful or to be an interference with any existing or vested right. The allegation that the Secretary of the Interior is excluding the State, its citizens, inhabitants, and property owners, from all access to the River and preventing their appropriation of unappropriated water is not predicated upon any claim of right or supported by any statement of facts upon which any right of access or possession can be based. The acts complained of are all alleged to have been pursuant to and under color of the Boulder Canyon Project Act. This Act and the Compact expressly recognize all existing rights to take water from the Colorado River and its tributaries. That these allegations of paragraph XXX are not intended to charge any actual or threatened invasion of presently existing rights is apparent from the prayer for relief, which seeks only a decree that the Compact and the Act be declared to be void because unconstitutional, and that the defendants be enjoined from carrying out their provisions and the pro-

visions of the contracts made pursuant to the Act. The whole burden of the complaint is that the appropriations of water authorized by the Compact and the Act will exclude others from using the water thus appropriated, if and when the balance of the stream has also been appropriated.

The appropriations of water which are about to be made under the Act do not deprive the State of Arizona or any of its inhabitants of any water to which it is now entitled and do not prevent the State or its inhabitants from making additional and substantial appropriations of water in the future.

Where the thread of the river constitutes the boundary between two States neither State may reserve to itself all the water from the stream for future appropriation.

The fact that a neighbor State proposes to divert to another watershed a portion of the water to which it is entitled is not material. Such diversions have been recognized as valid by this Court (*Wyoming* v. *Colorado*, 259 U. S. 419, 466; and see *Missouri* v. *Illinois*, 200 U. S. 496, 526), and they are so recognized by the six States parties to the Colorado River Compact (Art. II (f), (g); Bill, 52) with the approval of Congress. (Boulder Canyon Project Act, Sec. 13 (a), Bill, 74.)

So far as the United States proposes to divert water not theretofore appropriated, and to use it

for the reclamation and irrigation of public lands, it can not be restrained by Arizona within whose borders those lands are situated and under whose Organic Act such rights were expressly reserved. (*United States* v. *Rio Grande Dam & Irrigation Co.*, 174 U. S. 690, 703; Enabling Act: Act of June 20, 1910, c. 310, sec. 20, 28, 36 Stat. 557, 570, 575.) The United States may make use of its property for such purposes regardless of the wishes of the State. *Winters* v. *United States*, 207 U. S. 564, 577. See also *Stearns* v. *Minnesota*, 179 U. S. 223, 245; *Utah Power & Light Co.* v. *United States*, 243 U. S. 389, 403, 404; *United States* v. *Holt State Bank*, 270 U. S. 49, 54, 55; *Hunt* v. *United States*, 278 U. S. 96, 100.

And so far as Congress orders the erection of structures in a stream for the facilitation of interstate navigation or for flood control of such a stream, it is empowered to do so by the Constitution of the United States. *Gibson* v. *United States*, 166 U. S. 269; *United States* v. *Chandler-Dunbar Co.*, 229 U. S. 53; *Greenleaf Lumber Co.* v. *Garrison*, 237 U. S. 251; *Cubbins* v. *Mississippi River Commn.*, 241 U. S. 351, 369. See also *Sanitary District of Chicago* v. *United States*, 266 U. S. 405, 426.

Where the land to be protected by flood control is the property of the United States, Congress undoubtedly has power to regulate the flow of the stream.

It follows that the complaint, which merely alleges that the United States and other States in the Colorado River Basin are proposing to appropriate the unappropriated waters of the Colorado River to beneficial uses, can not be sustained when no actual or presently threatened invasion of any existing or vested right is alleged. Upon the allegations of the bill it is apparent that this suit begins where the suit brought by Kansas against Colorado ended—that is, with failure to show any injury, actual or threatened, which can justify the intervention of a court of equity. *Kansas* v. *Colorado*, 206 U. S. 46, 117.

III

IN FAILING TO ALLEGE ANY ACTUAL OR THREATENED INTERFERENCE WITH ANY EXISTING RIGHT OF THE COMPLAINANT, THE BILL OF COMPLAINT PRESENTS ONLY ABSTRACT QUESTIONS WHICH MAY NEVER ARISE IN ANY JUSTICIABLE CASE OR CONTROVERSY

The bill of complaint proceeds upon the basic theory that Arizona, not being a party to the Compact, is not bound by its terms, but that the Secretary of the Interior is proceeding under the Boulder Canyon Project Act to enforce the Compact against Arizona, and is thus interfering with the right of Arizona and her inhabitants to make appropriations of water from the unappropriated flow of the Colorado River. But if Arizona is not bound by the Compact she and her permittees may

make appropriations to beneficial uses under her laws at any point on the river where rightful access to the stream may be had. No invasion of this alleged right, actual or threatened, can be predicated upon the allegations of the complaint.

It is true that the complaint alleges (Bill, 10, 12) that but for the passage of the Act water would be diverted from the Colorado River under state authority; but the only place of taking named by the complainant is in Black Canyon, and the State does not allege facts the existence of which is prerequisite to any authorized taking of water from the stream at that point by any permittee of the State of Arizona. See p. 10, *supra*. In view of the facts that where the stream flows through the State of Arizona it flows through deep canyons (Bill, 6), in national parks and other reservations of the United States, and that where it is a boundary stream it would not be feasible to construct a storage and diversion dam without the consent of a State which is a party to the Colorado River Compact and which presumably would not grant consent except in furtherance of the purposes of that Compact, it may be doubted whether the State can make specific allegations of feasible plans for the diversion of more unappropriated water than is allotted to it under the Act and the Compact. Certainly the complainant has not yet alleged specific facts which, if proved, would entitle it to the injunction for which it prays.

This Court has said repeatedly that it will not consider merely abstract questions. *New York* v. *Illinois*, 274 U. S. 488, 489, 490; *New Jersey* v. *Sargent*, 269 U. S. 328, and cases there cited. It will not consider a complaint unless there are definite allegations of fact which, if true, show that rights are being invaded or immediately threatened. In any case the giving of advisory opinions would be beyond the jurisdiction of the Court; and this rule is applied with as much strictness where the original jurisdiction is invoked in a controversy between States as in cases within the appellate jurisdiction of the Court.

IV

CONGRESS HAS POWER UNDER THE COMMERCE CLAUSE TO ORDER THE CONSTRUCTION OF THE DAM AT BLACK CANYON

Section 1 of the Act (Bill, 58) declares that the law is enacted

> for the purpose of controlling the floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters thereof for reclamation of public lands and other beneficial uses exclusively within the United States, and for the generation of electrical energy as a means of making the project herein authorized a self-supporting and financially solvent undertaking * * *

Section 6 (Bill, 68) provides:

> That the dam and reservoir provided for by section 1 hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River Compact; and third, for power. * * *

The complainant alleges (p. 7):

> That part of the Colorado River which flows on the boundary between Arizona and California and between Arizona and Mexico flows between comparatively low banks, is therefore easily accessible, and is comparatively free from rapids and cataracts, but is obstructed by numerous sand-bars and is too shallow to permit of navigation. Said river carries great quantities of silt, which are constantly being deposited within and upon the bed thereof, and which, while so carried and after being so deposited, constitute a further obstacle to the navigation of said river. Another obstacle to the navigation of said river has resulted from the construction of said Laguna Dam by the Government of the United States, and the diversion of great quantities of water from said river for irrigation and other purposes. Because of said conditions, said river has never been, and is not now, a navigable river.

It is further alleged that the Colorado River flows for a distance of 235 miles on the boundary between Arizona and California and that Laguna Dam is eighteen miles above the point where the river becomes the boundary between Arizona and Mexico. (Bill, p. 4.) Thus it appears that for over 200 miles above Laguna Dam the river flows between comparatively low banks, is easily accessible and is comparatively free from rapids and cataracts, but it is alleged to be obstructed by sand bars and to be too shallow to permit of navigation. Great quantities of silt, after being deposited in this stretch of the river, are alleged to constitute a further obstacle to the navigation thereof." From these allegations it thus appears that the river throughout this distance is easily susceptible of improvement for the purposes of navigation if the sand bars and deposits of silt can be removed. The construction of the Dam will, of course, prevent additional deposits of silt. The enormous flow of the stream, relieved of its silt, will before long clear the channel of sand bars and of prior silt deposits.

The conclusion of paragraph VI quoted *supra* is that the river, including that portion of it which forms the boundary between California and Arizona, "has never been, and is not now, a navigable river." This conclusion, insofar as it relates to the portion of the river which forms the boundary between California and Arizona, is based upon the allegations above quoted relating to the obstruc-

tion of navigation by reason of silt deposits, and it can have no broader significance than the allegations of existing conditions upon which it is predicated. Furthermore, the defendant asks the Court to take judicial notice of the fact that that portion of the Colorado River has been and is now navigable and that its navigability will be increased by the regulation of the flow of water which is proposed.

The navigability of the Colorado between Laguna Dam and Callville has been repeatedly recognized by Congress and by Territorial and State legislatures. Until this Bill was filed its navigability, so far as we have been able to ascertain, has never been questioned. The authorities in Arizona prior to the commencement of this litigation have consistently asserted its navigability. And so we submit that its navigability below the proposed dam is a matter so notorious as not to require proof, and to be clearly within the knowledge of the Court.

Facts as to past and present navigability of the stream are set forth in an appendix to this brief.

The aid to be given by the dam in improving navigability is obvious. A reservoir of 29,500,000 acre-feet capacity (Bill, 89) will hold the water of a river whose average annual flow is alleged to be 18,000,000 acre-feet (Bill, 7). This reservoir will hold back water during time of flood and will allow an increased minimum flow at other seasons of the year. As shown by a report which was transmitted

to Congress a few weeks before the enactment of the Boulder Canyon Project Act (Report of the Colorado River Board of Engineers on the Boulder Dam Project, 1928. House Document No. 446, 70th Cong., 2d Sess., p. 13), the silt which is flowing along with the water at the present time will be retained in the reservoir, being deposited there at the rate of approximately 137,000 acre-feet per year, and the desilted water, flowing with regularity in the channel of the lower river, will steadily improve the condition of that channel. Such developments will unquestionably increase the navigability of the river.

This Court may take judicial notice of the navigability of the stream. As it said in *The Montello*, 11 Wall. 411, 414:

> We are supposed to know judicially the principal features of the geography of our country and, as a part of it, what streams are public navigable waters of the United States.

It said in *Muller* v. *Oregon*, 208 U. S. 412, 421:

> We take judicial cognisance of all matters of general knowledge.

To the same effect are *The Planter*, 7 Pet. 324, 342; *Brown* v. *Piper*, 91 U. S. 37, 42; *Brown* v. *Spilman*, 155 U. S. 665, 670; *United States* v. *Thornton*, 160 U. S. 654, 658, 659; *Louisville Trust Co.* v. *Louisville, N. A. & C. Ry. Co.*, 174 U. S. 674, 683; *United States* v. *Rio Grande Dam & Irr. Co.*, 174

U. S. 690, 696–698; *Cubbins* v. *Mississippi River Comm.*, 241 U. S. 351, 367; *Carroll* v. *United States*, 267 U. S. 132, 159, 160. And in *Brown* v. *Piper*, 91 U. S. 37, 42, it held:

> If the judge's memory is at fault he may refresh it by resorting to any means for that purpose which he may deem safe and proper.

When facts are averred which run counter to facts of which the Court takes judicial notice, the averments are disregarded. *Jones* v. *United States*, 137 U. S. 202, 215; *Pearcy* v. *Stranahan*, 205 U. S. 257, 263; *Middlesex Transportation Co.* v. *Pennsylvania R. Co.*, 82 N. J. E. 550, 553; *Heiskell* v. *Knox County*, 132 Tenn. 180, 186; see also *McSween* v. *State Live Stock Board*, 97 Fla. 750, 774.

Even though there is but little if any transportation on the river at the present time, Congress has not lost its power to improve the stream. In *Economy Light & Power Co.* v. *United States*, 256 U. S. 113, 124, this Court said:

> The Desplaines River, after being of practical service as a highway of commerce for a century and a half, fell into disuse, partly through changes in the course of trade or methods of navigation, or changes in its own condition, partly as the result of artificial obstructions. In consequence, it has been out of use for a hundred years; but a hundred years is a brief space in the life of a nation; improvements in the methods of water transportation or increased

> cost in other methods of transportation may restore the usefulness of this stream; since it is a natural interstate waterway, it is within the power of Congress to improve it at the public expense; and it is not difficult to believe that many other streams are in like condition and require only the exertion of federal control to make them again important avenues of commerce among the States. If they are to be abandoned, it is for Congress, not the courts, so to declare.

We have already (p. 23, *supra*) cited authorities for the proposition that Congress may erect structures in a river in order to improve its navigability.

The Act declares (Sec. 6, Bill, p. 68):

> That the Dam and reservoir provided for by Section I hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article 8 of said Colorado River Compact; and third, for power.

In the face of this mandatory declaration of purpose, to say that purposes other than the improvement of navigation are to be served by the construction of the dam and reservoir will not suffice to defeat the Act as one beyond the power of Congress. Congress might properly give weight to the fact that by the same measures it would secure additional desirable results without thereby infringing upon any rights of the complainant.

It is true that in the Compact the States, which were considering the river as a whole, said that it had ceased to be navigable and that the use of its waters for purposes of navigation should be subservient to other uses; but the power of Congress to deal with it as a navigable stream was clearly recognized (Article IV of the Compact, Bill of Complainant, p. 50) so far as the river below the dam is concerned. Congress has declared that its navigability is to be improved and its floods controlled by the construction of the dam. Other uses of the water may be made to the extent which Congress has authorized in the Act; but such uses are not inconsistent with the intent of Congress to improve navigability, for Congress doubtless knew that while provision is made for appropriations of water into the distant future there will always be a substantial flow of water in the lower reaches of the river if only to satisfy the rights of appropriators in southern Arizona, in the Imperial Valley of California, and, if any, in Mexico. And Congress knew, of course, that the use of the water for the generation of electrical energy would not reduce the flow of the stream.

Clearly the allegation of the Complaint (p. 31): "The recital in said act [Boulder Canyon Project Act] that the purpose thereof is the improvement of navigation and the reclamation of public land is a mere subterfuge and false pretense," must be disregarded in the face of the statute, the facts

alleged in the complaint, and the facts of which this Court will take judicial notice.

V

REGARDLESS OF THE POWER OF CONGRESS UNDER THE COMMERCE CLAUSE, THE ACT IS CONSTITUTIONAL

The United States is the owner of nearly six hundred square miles of irrigable public lands and Indian reservations along and near the shores of the Colorado River in Arizona (Senate Doc. No. 142, 67th Cong., 2d Sess., pp. 47–80) and in California. (Same, pp. 13, 15.) As such owner it is entitled to impound water, to regulate its flow, and to consume a portion of it. *United States* v. *Rio Grande Dam & Irrigation Co.*, 174 U. S. 690, 703. It is obvious that where the flow of a river varies greatly in volume from season to season the total supply of water will be best utilized by impounding a large part of the flow in time of flood and by releasing it gradually at other times.[1]

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[1] From Report of Colorado River Board, House Doc. No. 446, 70th Cong., 2d Sess., p. 1:

"Its main flow is derived from the melting of snow on the mountains of the upper basin. The principal characteristics of its flow are low waters during the autumn and winter months, with a normal flood from the melting snows, usually beginning late in April, reaching its maximum in June, and ending by the middle of August. This flow is modified and intensified by torrential floods of short duration, which come in general from its southern tributaries, and may occur during almost any month of the spring, fall, or winter. Its flood flows afford by far the greater quantity of water produced by the stream, and must be conserved and impounded in order to be successfully utilized for water supply and power production."

The State of California, whose jurisdiction extends to the middle of the Colorado River, is entitled to receive water from that stream. It is submitted that the Government may properly release to the State as much water as the State is entitled to appropriate. Part of the water is to be turned over to the Metropolitan Water District of Southern California under a contract by which the District will pay for water which has been stored behind Hoover Dam something towards recouping the cost of constructing the reservoir. This is justified as a reasonable charge for storing and releasing the water. Part of the water will be diverted from the river near Laguna Dam, where appropriation rights have already been established and where there are also both public and Indian lands. Senate Doc. No. 142, 67th Cong., 2d Sess., pp. 13, 15. Unless the Government is undertaking to supply to California more water than that State is entitled to appropriate, the approval of the State of California is sufficient justification for this diversion.

The flow of water is to be regulated and the water desilted, not only to improve navigation but in order to save the Yuma, Palo Verde, and Imperial Valleys from destruction. As shown in the reports of the Reclamation Service and of committees of the Senate and House of Representatives of the United States (see Appendix B), the Imperial Valley, with a population of 65,000 persons and with property values of over $100,000,000,

lies from one hundred to three hundred feet below the channel of the river. If the river breaks through into the valley, the water will have no outlet but will remain there until taken out by the slow process of evaporation. Each season, because of silt deposits, the bed of the river rises higher. The river "is restrained by dykes and levees. The height of these levees has been constantly increased until to-day they are built to the danger point and can not be built higher." Storage of flood waters, with removal of the silt in the storage reservoir, constitutes the only remedy.

> An outstanding feature of the testimony before the committee was the unanimity of view respecting the existence of the flood danger, its seriousness, urgent need for quick action, and that storage up the river was the solution. Engineers like A. P. Davis, F. E. Weymouth, Gen. George Goethals, and William Mulholland joined with responsible executive officials like Mr. Herbert Hoover in voicing this idea. Admittedly and concededly, storage at Boulder Canyon as here authorized will effect the greatest measure of security against the river's floods which may be obtained. (Appendix B.)

Even where Congress has no power to enact regulatory legislation as to a subject matter, it may make appropriations for the public welfare. It has done so ever since the earliest years of the country's history. The power of Congress to do

so was discussed at length in the Government's brief in *Massachusetts* v. *Mellon*, 262 U. S. 447. It is too well established to require further attention from the Court. Even if the dam were to be erected solely in order to save the Imperial Valley from destruction, the Boulder Canyon Project Act would be constitutional.

And if by storing water and releasing it gradually the Federal Government will not only improve navigation and render life and property safer in California and in Arizona but will secure a revenue which will make this great undertaking self-supporting, it will be adopting measures which are not prohibited but are consistent with the letter and the spirit of the Constitution and reasonably necessary to the exercise of the powers delegated to Congress.

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JANUARY, 1931.

APPENDIX A

The Navigability of the Colorado River

On November 3, 1864 (Laws of Arizona Territory, p. 24), the territorial legislature of Arizona granted a franchise to maintain a ferry across the Colorado River at Mojave; on November 7 (p. 36), it granted a franchise for a ferry across the Colorado River at La Paz, and on November 9 of that year (p. 79) it adopted a memorial to Congress saying that the Colorado River was the only navigable water in the Territory and asking Congress to make an appropriation of $150,000 for the improvement of its navigation, declaring that the river was the channel through which nearly all imports and exports must pass to supply the middle and northern portions of the Territory; that the river was navigable in high stages of water for five hundred miles, and that by the expenditure of a small amount of money the river might be made navigable as far up as Virgin River.

On December 28, 1865 (p. 77), the territorial legislature declared to Congress that the river was navigable and asked for an appropriation of $150,000 to improve navigation to Callville.

In 1866 (p. 61) it adopted a resolution saying that the Colorado River had been successfully navigated to Callville. On November 5 of that year (pp. 67, 68) it adopted a memorial in which it told Congress that the Colorado River had been—

> justly styled the Mississippi of the Pacific. By this great river the Territory receives the

> most of its supplies, and lately it has become the channel of a large part of the trade of San Francisco with Utah and Montana.

On February 14, 1871 (p. 52), the ferry act of November 7, 1864, was amended.

On March 6, 1882 (p. 301), the Arizona legislature declared that the Colorado River was navigable to the junction of the Virgin and Colorado Rivers at Rioville during the highest stages of water and asked Congress to appropriate $125,000, saying that—

> At proportionately small outlay asked by your petitioners, said Colorado River could be made, by the removal of obstructions, navigable during all seasons of the year for light tonnage crafts of all kinds to a point thirty miles above Rioville, which can be verified by any practical and unprejudiced engineer.

By Act of July 5, 1884, c. 229, 23 Stat. 133, 144, Congress appropriated $25,000 for the improvement of the Colorado River between Fort Yuma and a point thirty miles above Rioville.

On February 21, 1885 (p. 367), the territorial legislature of Arizona repeated the request set forth in the memorial of 1883 in the same terms except that the request was then made for $100,000.

In 1889 (p. 109) the territorial legislature repeated, in the same terms, the request made in 1883, again asking for an appropriation of $125,000.

In 1903 (p. 170) the Arizona House of Representatives asked Congress to construct a levee from Yuma along the east bank of the Colorado River to the Mexican border. It said:

These lands are as fertile as those of the historic valley of the Nile. They lie in a semitropical climate where date palms and fig trees, the olive, the orange, and the lemon flourish, and the air is filled with the scent of new-mown hay in December.

They are the natural source of food supply for a mining and grazing region extending over thousands of square miles.

A levee which would protect these lands would also be a great benefit to navigation. The Colorado river is the third greatest river of the United States, draining as it does, over one-third of the country lying between the State of Kansas and the Pacific Ocean.

Its depth at Yuma during low water is sixteen feet; during high water, which lasts throughout the months of May, June, July, and August, twenty-five feet. *It is navigable for a distance of six hundred and forty miles. No river on the entire western slope of the New World, unless it be the Yukon, has such an extent of navigable channel.*

Though *this river has been navigated constantly for the last half century,* yet not one dollar has been appropriated toward the improvement of this the natural highway for a vast extent of the Territory.

Therefore, for the benefit of navigation upon this great river, for the improvement of one of the most fertile regions of the world, and for the protection of the settlers from ruinous floods, we petition your honorable body that you do pass H. R. No. 8594 appropriating $100,000 for the construction of a levee from the Town of Yuma in Arizona along the east bank of the Colorado River to the northern boundary of Mexico.

In 1909 the Territorial Legislature (p. 301) adopted a memorial to Congress in which it said:

> That for many years the said navigable right was put to great use and was of much benefit to the citizens of Arizona, and was in fact the only means of transportation by which they could get in their supplies and ship out mineral and other export products; that with the advent of the railroad, owing to the then sparsely settled conditions of the Territory, navigation on the river became unprofitable and was practically abandoned in so far as it consisted in navigating the Colorado River to its mouth at the Gulf of California, but did continue and still continues along nearly the whole western boundary of the Territory. * * *
>
> That the navigable way down the Colorado River, from Yuma to the Gulf of California, has, through the lack of use and proper government attention and control, became somewhat unfitted for navigation by boats of anything like heavy draught; that Arizona with its wonderful natural resources now in the infancy of their development can, by the benefit of water transportation and the low competitive rates of transportation resulting therefrom, develop its vast resources and take its place among the wealthy sections of the Union.
>
> Wherefore, your memorialists most earnestly request your serious consideration to the end that governmental aid be had, proper investigations instituted and sufficient appropriations made to dredge, protect, and control the channel of the Colorado River from Yuma, in the Territory of Arizona, to the Gulf of California, and thus conserve, perpetuate, and make useful and of benefit for this generation and for posterity *the most valuable of our Territory's*

natural resources—our right of navigation over the Colorado River and the Gulf of California.

At the same session (p. 306) the legislature asked Congress to appropriate $200,000 for the construction of a wagon bridge across the Colorado River at Yuma. It said:

> The Colorado River is the boundary line between the Territory of Arizona on the east and the States of Nevada and California on the west and is a navigable stream and under the direct control of the Government of the United States.

On January 12, 1925 (Session Laws of Arizona, 1925, p. 524), the present Governor of Arizona declared in a message to the legislature of that State that

> Assertions have been made from time to time as to the rights of Arizona in the Colorado River. This river is recognized as a navigable stream.

See also the reports of the Territorial Governors to the Secretary of the Interior on September 1, 1893 (53d Cong., 2d Sess. H. R. Exec. Doc. 1, pt. 5, vol. 3, pp. 337, 338, 339); September 25, 1894 (53d Cong., 3d Sess. H. R. Ex. Doc. 1, pt. 5, vol. 3, p. 388); September 26, 1895 (Report of Governor of Arizona to Secretary of Interior, Government Printing Office, 1895, p. 61); October 17, 1896 (Report of Governor of Arizona to Secretary of Interior, Government Printing Office, 1896, pp. 137, 139); August 31, 1898 (Report of Governor, 1898, pp. 12, 72, 73); September 1, 1899 (Report of Governor, 1899, pp. 214, 216); the statements of Congressman Hayden, of Arizona, before the Committee on Irrigation and Reclamation of the House

of Representatives, 69th Cong., 1st session, on H. R. 6251 and H. R. 9828, Part 1, pp. 77, 104, 106, 107, 140, 141; and the statements of Governor Hunt of Arizona before the Senate Committee on Irrigation and Reclamation, 70th Cong., 1st Sess., on S. 728 and S. 1274, pp. 28, 30.

See also Sloan, History of Arizona, 1930, vol. 1, chap. 14; Farish, History of Arizona, vol. 3, p. 114, vol. 4, p. 14; New International Encyclopedia, 2d ed., vol. 5, p. 620; Dellenbaugh, The Romance of the Colorado River, 142, 152–156, 173; McClintock, Mormon Settlement in Arizona, 110; McClintock, History of Arizona, I, 302–305, II, 330, 559; Freeman, The Colorado River, 146, 159, 167; Bancroft, History of Arizona and New Mexico, 489, 494, 499, 601; Hodge, Arizona As It Is, 35, 143, 156, 208; Rusling, Across America, 355; Hinton, Handbook of Arizona, 66, 372; Hamilton, Resources of Arizona, 2d ed., 56, 213; Bishop, Old Mexico and Her Lost Provinces, 475; Robinson, Story of Arizona, 109.

The statutes of Arizona provide for the punishment of any offense which may be committed on board a vessel navigating a river. (Revised Code of Arizona, 1928, sec. 4921.) The Colorado River is the largest river with which the State of Arizona is acquainted.

Joint resolutions of the Nevada legislature also asserted the navigability of the Colorado River. Statutes of Nevada, 1869, p. 296; 1881, p. 187; 1883, p. 184.

By several Acts of Congress (Acts of June 30, 1913, c. 4, 38 Stat., 77, 85; Aug. 1, 1914, c. 222, 38 Stat. 582, 588; August 23, 1916, c. 400, 39 Stat. 533; January 24, 1923, c. 37, 42 Stat. 1172; March 3, 1925,

c. 452, 43 Stat. 1130; May 3, 1926, c. 225, 44 Stat. 387) authority was given for the construction of bridges over the Colorado River; but in each case the law provided that the bridge was to be maintained and constructed in accordance with the provisions of the Act regulating the construction of bridges over navigable waters.

Before the enactment of the Boulder Canyon Project Act extensive investigations were made. The Director of the United States Reclamation Service rendered an elaborate report which was transmitted to the Senate on February 28, 1922, and published as Senate Document No. 142, 67th Cong., 2d sess. It opens with this statement:

> The control of the floods and development of the resources of the Colorado River are peculiarly national problems for several good reasons.
>
> 1. The Colorado River is international.
>
> 2. The stream and many of its tributaries are interstate.
>
> 3. *It is a navigable river.*
>
> 4. Its waters may be made to serve large areas of public lands naturally desert in character.
>
> 5. Its problems are of such magnitude as to be beyond the reach of other than national solution.

The Committee on Irrigation and Reclamation of the House of Representatives, which had held hearings, filed a report on March 15, 1928, in which it said (House Report No. 918, 70th Cong., 1st sess., p. 22):

> While the navigability of the Colorado River has not been judicially determined evidence has been presented which would tend toward the conclusion that the river is

navigable as a matter of law. The proposed dam would improve navigation probably more than any other works which could be constructed. The dam will so regulate the flow as to make the river very practicable of navigation for 200 miles below and impound water above which could easily be navigated for more than 75 miles. The rights of the United States under the commerce clause of the Constitution to construct works in a navigable stream to improve navigation is settled beyond all possible question. It is also brought to the attention of the committee that there are two transcontinental railroads and three "Federal aid" transcontinental highways crossing the river below the Boulder Dam site. These five interstate lines of commerce would be safeguarded against the possibility of destruction by floods on the river by the construction of the proposed dam. The commerce clause of the Constitution refers to commerce by land as well as by water.

The Senate's Committee on Irrigation and Reclamation, which had also held extensive hearings, reported on March 20, 1928 (Senate Report No. 592, 70th Cong., 1st Sess., p. 8):

> The construction of the dam in addition to providing efficient flood control and making available the flood waters for irrigation and domestic uses, will fully regulate the flow of the river. With its flow unregulated, the river can not be successfully used as a highway for commerce; in its regulated form it will provide a safe and dependable flow below the dam that can be used by power boats and other small craft. The reservoir created by the dam will be the largest artificial lake in the United States and capable of successful navigation.

APPENDIX B

Flood Control

From Report of Director of Reclamation Service, 1922, Senate Doc. No. 142, 67th Cong., 2d Sess., pp. 7, 8, 20:

Owing to the gradual upbuilding of its deltaic bed and banks the flood menace from the Colorado River is an increasing and ever-recurring problem of great importance.

The Gulf of California formerly extended northwestward to a point a few miles above the town of Indio, about 144 miles from the present head of the gulf. The Colorado River, emptying into the gulf a short distance south of the present international boundary, carried its heavy load of silt into the gulf for centuries, gradually building up a great delta cone entirely across the gulf and cutting off its northern end, which remains as a great depression from which most of the water has been evaporated, leaving in its bottom the Salton Sea of 300 square miles, with its surface about 250 feet below sea level.

The river flowing over its delta cone steadily deposits silt in its channel and by overflow on its immediate banks, so that it gradually builds up its channel and its banks and forms a ridge growing higher and higher until the stream becomes so unstable that it breaks its banks in the high-water period and follows some other course. In this manner the stream has in past centuries

swung back and forth over its delta, until this exists as a broad, flat ridge between the gulf and the Salton Sea, about 30 feet above sea level, and on the summit of this has formed a small lake, called Volcano Lake, into which the river flows at present, the water then finding its way to the southward into the gulf.

The direct distance from Andrade on the Colorado River, where it reaches Mexico, to the head of the gulf is about 75 miles, and the distance to the margin of Salton Sea is but little more. As the latter is about 250 feet lower than the gulf, the strong tendency to flow in that direction needs no demonstration. This, coupled with the inevitable necessity for such an alluvial stream to leave its channel at intervals, constitutes the menace of the lands lying about Salton Sea, called the Imperial Valley. As there is no escape of water from Salton Sea except by evaporation, the river flowing into this sea would, unless diverted, gradually fill it to sea level or above and submerge the cultivated land and the towns of Imperial Valley, nearly all of which are below sea level. Any flood waters that overflow the bank to the north must therefore without fail be restrained and not allowed to flow northward into Salton Sea. This is now prevented by a large levee, north of Volcano Lake, extending eastward and connecting with high land near Andrade. This levee is in Mexico and its maintenance is complicated thereby.

In 1905 the river scoured out the channel of the Imperial Canal and turned its entire volume into the Salton Basin, eroding a deep gorge and raising the level of Salton Sea. It submerged the salt works and forced the removal of the main line of the Southern Pacific Railroad. At great diffi-

culty and expense, after several unsuccessful attempts, the river was returned to its old channel in February, 1907. The control of the river would be greatly facilitated if the floods were reduced in volume by storage. Investigations have been made concerning the feasibility of storing the floods and reducing their volume to an amount easily controlled. * * *

One of the great problems concerning the Colorado is that of silt. The Boulder Canyon dam as planned would store the silt for over three centuries, if all were caught and held, and for nearly a century before greatly impairing its water-storage function. It is hoped before that time that other developments above will so regulate the flow that not all of its storage capacity will be needed, but it will always be desirable to control the floods of the region between Boulder Canyon and Glen Canyon, and before the capacity of the Boulder Canyon is entirely destroyed the Glen Canyon regulator can be built to take its place. It will then be fresh and empty of silt and will last to as much later date as the age of the Boulder Canyon reservoir at that time and will, therefore, solve the silt problem for a period of two or three hundred years further into the future than if it is built first, and can, if desired, be employed as a sluicing agency for sluicing out the Boulder Canyon reservoir.

From Report of House Committee on Irrigation and Reclamation, 1928, House Report No. 918, 70th Cong., 1st Sess., pp. 5, 15-17:

Imperial Valley has a population of 65,000 people, six well built, incorporated cities, besides several unincorporated towns, over

400,000 acres of cultivated farms, and property values of over $100,000,000. * * *

PART IV. FLOOD CONTROL

Throughout all the years of hearings on this development there has been expressed by all witnesses who have appeared before the committee an absolute unanimity of view respecting the existence of flood danger in the lower Colorado River, the urgent need for quick action, and that large storage up the river is the only permanent solution of the flood problem. There has also been a like unanimity of opinion that the construction of the dam and storage at Boulder or Black Canyon, as here authorized, would furnish as complete a solution of the flood danger of the river as could possibly be accomplished.

This unanimity of sentiment was to be expected in view of the physical characteristics of the river, and particularly in view of the physical characteristics and situation of Imperial Valley in respect to the Colorado. Here is a great valley, with 450,000 acres of irrigated farms and with populous cities, lying in a great depression or sink from 100 to 300 feet below the channel of the river. The slope toward the valley is much greater than the slope toward the gulf. Of course the river at any flood time may break from its shifting and uncertain channel and turn into the valley. The flooding of Imperial Valley would not be like the flooding of other sections, where property damage and perhaps loss of life result, but where soon the water subsides. If the Colorado once breaks into the valley and is not returned to its channel, it means its permanent inundation, there being no outlet for the

water. The danger, ever present, of a great flood has led every responsible Government official who has ever studied the situation to promptly and earnestly recommend immediate steps to remove the danger of such a catastrophe.

LEVEES FURNISH INSUFFICIENT PROTECTION

Efforts toward the protection of Imperial Valley have been made through the construction of levees, with only partial success. In 1905 the river broke into Imperial Valley, and it took two years of heroic efforts and great expense to return the river to its channel toward the Gulf. The United States then expended approximately $1,000,000 in building what was known as Ockerson Levee in Mexico. Hardly was this levee completed until it was washed away. The river, which theretofore had been flowing almost due southward along the foot of a plateau in Arizona and Mexico, turned westward toward the Volcano Lake region, still in Mexican territory, but in a lower depression on the delta. The river was kept in this course by an extensive levee system built by the people of Imperial Valley. Gradually, however, this depression filled up. The Imperial irrigation district then, at an expense of approximately $700,000, directed the river through what is known as the Pescadero Cut into a triangular depression lying between the old river channel on the east and the Volcano Lake region on the north and west. This is the one remaining depression on the surface of this delta into which the river can be directed.

The Imperial irrigation district is compelled to maintain a large and expensive organization for the building and mainte-

nance of levees in Mexico. It has built 78 miles of these levees. The district has 60 miles of railroad, trains of dump cars, and other expensive equipment for keeping these levees, which are ever being undermined and destroyed when the river is in flood.

SILT DEPOSITS AGGRAVATE FLOOD DANGER

Reference has already been made to the fact that the Colorado deposits below Yuma yearly more than 100,000 acre-feet of silt. The flood danger from the river is greatly aggravated by this silt, for it was the silt deposit that built the deltaic ridge on which the river now flows, filled the old channel of the river, and later filled the channel toward Volcano Lake. Indeed, any depression which the river finds in which to flow is quickly filled with silt.

Estimates differ as to how long it will take the river to fill up the Pescadero depression, through which it is now flowing. Some say 8 years, some say 20 years. No one knows for a certainty. All that is known is that within a comparatively short time it will be filled.

The situation thus adverted to was excellently described by Mr. A. P. Davis, former Director of the Reclamation Service, as follows:

"In 1920 the situation became so critical that the district undertook at great expense to make a cut from the Bee River Channel to the Pescadero and succeeded in diverting the river into that channel, where it now flows. We now have the condition of relatively high land along the Bee Channel and the levee on the north, running westward to Volcano Lake. We have another ridge which the river followed for a long time and

built high, running nearly south, from Yuma to the Gulf of California. Between these is a triangular tract which is lower than either, traversed by the Pescadero in which the river is now flowing. It was testified here that it would take from 15 to 25 years to build up this delta as high as the Bee River ridge. No one can tell even approximately, but it may be assumed that this channel, like the Bee Channel, will begin to grow unstable in 10 or 12 years, though it may be possible to keep the river in its present vicinity considerably longer. It is certain, however, that the river will not fill every part of that triangle of low ground before it begins to give serious trouble.

"We know also that the river is now busy in its filling job and will continue it without cessation until it is completed. It will then become again as threatening as it was in 1921, when Imperial Valley was fighting for its life to keep it from overtopping Volcano Lake levee. As soon as we provide a large desilting reservoir, we will hold back the silt and the building process will be checked. If this is done at once, we take advantage of the low areas, and with the silting process checked the river channel will become relatively permanent, on low ground, with no tendency to leave it. Some sediment will come from the Gila, but it is certain that the building-up process will be made much slower, and the menace of the river regulated in flow will be removed to a distant date.

"If, on the contrary, the large desilting reservoir is postponed as some people propose, the silting will continue until this basin is filled, and the river again flowing on top of a ridge, ready to break loose with any

freshet, and threaten Imperial Valley as it did three years ago. It is clear that the desilting reservoir must be provided quickly, and it must be of large capacity, and must form a permanent lake in which all sediment will settle. (Hearings on H. R. 2903, 68th Cong., p. 1379.)"

No estimates have been made as to what the cost would be to dredge an artificial channel across the delta in Mexico after the Pescadero depression is filled. The cost would, of course, be enormous and doubtless beyond the resources of local communities. The work of so dredging and maintaining a channel would also be surrounded by almost insurmountable difficulties because of being in a foreign jurisdiction and when completed would be only another temporary expedient as the river would immediately start its work of filling it with silt.

DAM AT BOULDER CANYON WILL TAKE CARE OF SILT

Almost all of the silt now being discharged by the river is picked up through and above the canyon section and above Boulder Canyon. The proposed great reservoir there will provide ample capacity for intercepting and storing the silt. More than 300 years would be required to fill the entire reservoir, and this even without the construction of other dams above. In the meantime, of course, other developments will occur farther up the river which will intercept large portions of the silt discharge and thus prolong indefinitely the usefulness of this reservoir.

THE EFFECT OF FLOOD DANGER

The danger in which the Imperial Valley always stands of being flooded necessarily creates a feeling of uncertainty. Property values there were less than half of what the income from the property would justify. Money can be had only at excessive interest rates, while Federal farm-loan banks refuse to lend money on Imperial Valley farms.

From Report of Senate Committee on Irrigation and Reclamation, 1928, Senate Report No. 592, 70th Cong., 1st Sess., pp. 6, 7, 19, 20:

A menacing and destructive agency in its natural state, the Colorado River but awaits development and control, to be one of the great contributing factors to the wealth of the Nation and the happiness of the people of all of the territory of the Southwest. Successive administrations have recognized not only the possibilities of regulation and control of the Colorado River but the necessity for that regulation and control. From the time of President Roosevelt to that of President Coolidge, the Federal Government has recognized the problems of the Colorado River and the lands dependent upon it, and that these problems because of their country wide and international aspects were national in character and a matter of national concern. The present bill embodies the conceded solution of years of painstaking care and thorough study and investigation by the ablest engineers of our country. It seeks not only the control of one of the Nation's great rivers, but endeavors to remove the danger and the menace which, like a pall, has rested upon tens of thousands of American citizens, utilizes what is now waste water for

reclamation, irrigation, and domestic use, and ends the intolerable conditions now surrounding the Imperial Valley in its water supply.

The citizens in the Imperial Valley and the territory contiguous thereto have long been praying the Congress for relief from the perilous position in which the Colorado River in its erratic moods has placed them. Imperial County is the southeasterly county of the State of California. It borders upon Mexico. In its conformation physically it is different from any other part of our country and possibly different from any part of any other country in the world. The fertile valley which takes its name from that of the county is in shape like a saucer. Along the rim of a part of this saucer-shaped land flows the turbulent Colorado River. Beneath is the valley, 250 feet below the level of the sea. The rainfall is negligible. It is a natural desert composed of silt from the river that flows above it and which, during the ages, has reclaimed the sea, for the Imperial Valley at one time undoubtedly was a part of the Gulf of California, which gradually has been filled by this silt deposit of the Colorado River. * * *

Each season, because of the silt it carries, its bed rises higher. It is restrained and controlled by dykes and levees. The height of these levees has been constantly increased until to-day they are built to the danger point and can not be built higher.

Storage above and the regulation of the flow are now recognized as the only means of protection from floods, not only for the Imperial Valley but for a part of Arizona, a part which by reason of its development has become a productive, valuable, and beautiful territory. The flood danger, so far as

the Imperial Valley is concerned, is unlike that which exists in any other part of the United States. In other localities, destructive floods may occur with untold losses, and yet the waters subside and the territory affected ultimately recover. In the Imperial Valley floods mean water entering the basin of the saucer-shaped land with no possible outlet. Millions of dollars have already been expended, not only by the localities affected, but by the Federal Government, in the attempt to protect the lower basin of the Colorado River from floods. Levees at times have no sooner been built than they have been washed away. Here finally is presented a unified plan for protecting those entitled to protection, for the allocation among the States desiring that allocation of the waters of a great river to which all are entitled, for the elimination of intolerable conditions by which a fertile and productive part of the United States is dependent for its very life upon water which flows through Mexican territory, and finally for converting into a great national asset a wasteful and destructive agency, and by its control reclaiming for homes for Americans, land now arid and worthless.

The project contemplates the construction of a large dam and storage reservoir at Boulder or Black Canyon where the Colorado in its mad moments has prepared precipitous perpendicular granite or basalt walls more than 1,600 feet in height. In addition, an all-American canal for the protection of the lands of Imperial and Coachella Valleys is provided for. The dam will be approximately 550 feet in height and will create a water storage of 26,000,000 acre-feet.

And at the beginning and at the end of this report, it should be made plain that the entire project will finance itself; that the bill provides no work shall be undertaken and no money expended until the administration has provided for the adequate repayment of every penny that may be expended. The testimony demonstrates conclusively that the money for the work under this bill will be forthcoming, and that this tremendous enterprise, one of the greatest of our generation, fraught with such potential possibilities for good and with such incalculable benefit to our people, will cost the Federal Government nothing except loss of interest on reclamation features, the same as in all other works of this kind, and administrative effort. * * *

It should further be pointed out that, in addition to destroying crops and damaging lands, the Imperial Valley has the decided disadvantage of being below sea level and having no outlet for the water. Ordinarily, the flood waters from any stream finds its way back into the stream as the flood subsides. This is not the case in Imperial Valley. There the flood waters remain in the basin until taken out by the slow process of evaporation. * * *

Floods above Imperial Valley, were they not overshadowed by the exceptional flood danger to Imperial Valley, would attract attention and call for remedial measures. In 1916 the water stood 2 feet deep in the streets of the town of Yuma and threatened its destruction. In 1922 the river inundated a large part of Palo Verde Valley and the water stood several feet deep in the town of Ripley in that valley, destroying much property and otherwise causing a large amount of damage. Other floods have submerged

the Parker Valley and also done serious damage to the city of Needles.

The greatest flood danger, however, is to the Imperial Valley, lying far below the river's channel and with no outlet for flood waters once they enter the valley. * * *

An outstanding feature of the testimony before the committee was the unanimity of view respecting the existence of the flood danger, its seriousness, urgent need for quick action, and that storage up the river was the solution. Engineers like A. P. Davis, F. E. Weymouth, Gen. George Goethals, and William Mulholland joined with responsible executive officials like Mr. Herbert Hoover in voicing this idea. Admittedly and concededly, storage at Boulder Canyon as here authorized will effect the greatest measure of security against the river's floods which may be obtained.

U. S. GOVERNMENT PRINTING OFFICE, 1928